Table of Contents

	Page
Executive Summary	ES-1
Chapter 1. Introduction	1-1
Background on Biosolids Management in California	1-1
Existing Regulations for Land Application of Biosolids	1-2
Purpose of the Statewide Program EIR	1-3
The Scoping Process	1-3
Notice of Preparation	1-4
Other Scoping Activities	1-4
Issues to Be Addressed in the EIR	1-6
Public Involvement	1-6
Terminology	1-7
Report Organization	1-7
Agencies That Will Use This Document	1-8
Anticipated Conditions Following Adoption of the GO	1-9
Chapter 2. Program Description	2-1
Background on Biosolids Generation, Disposal, and Reuse	2-1
Existing and Projected Biosolids Land Application in California	2-1
Existing Regulatory Programs	2-5
State Programs—Role of RWQCBs	2-5
Federal Programs—Part 503 Regulations	2-5
Local Programs—County Ordinances	2-7
General Order Program Objectives	2-8
Comply with California Water Code and Judicial Order	2-8
Provide Regulatory Framework for RWQCB Permit Process	2-9
Provide Flexible Regulatory Framework	2-9
Description of General Order	2-10
Overview	2-10
Applicability	2-10
Relationship of the GO to Part 503 Regulations	2-11
Discharge Prohibitions of the GO	2-13
Discharge Specifications of the GO	2-14
Storage and Transportation	2-14
Provisions	2-15
GO Exclusion Areas	2-16

Chapter 3. Soils, Hydrology, and Water Quality	3-1
Environmental Setting	3-1
Soils	3-1
Hydrology	3-5
Water Quality	3-6
Regulatory Setting	3-20
Key Policies, Laws, and Programs	3-20
Impacts and Mitigation Measures	3-26
Approach and Methods	3-26
Thresholds of Significance	3-26
Impacts of Agricultural Use	3-27
Impacts of Other Activities	3-37
Chapter 4. Land Productivity	4-1
Introduction	4-1
Environmental Setting	4-2
Impacts and Mitigation Measures	4-2
Thresholds of Significance	4-2
Impacts of Agricultural Use	4-3
Impacts of Other Activities	4-15
Chapter 5. Public Health	5-1
Environmental Setting	5-2
Introduction	5-2
Pathogens	5-3
Non-Pathogenic Contaminants	5-7
Routes and Pathways of Contact	5-10
Potential Health Effects from Direct Ingestion or Intake of Foods	
Related to Biosolids	5-16
Regulatory Setting	5-17
Waste Discharge Requirements	5-17
National Pollutant Discharge Elimination System Permits	5-18
California Hazardous Waste Control Law	5-18
Discharge of Waste to Land	5-18
Regulatory Requirements for Composting Operations	5-19
Source Reduction and Recycling	5-19
Safe Drinking Water and Toxic Enforcement Act	
(Health and Safety Code Section 25249.5)	5-20
Ambient Water Quality Criteria for the Protection	
of Human Health	5-20
Ambient Air Quality and Air Toxics	5-20
State Health and Safety Code and California Food	
and Agricultural Code	5-20
California Occupational Safety and Health Act Requirements	5-21
Food Safety	5-21

Impacts and Mitigation Measures	5-23
Approach and Methods	5-23
Thresholds of Significance	5-25
Impacts of Agricultural Use	5-25
Impacts of Other Activities	5-37
Chapter 6. Land Use and Aesthetics	6-1
Environmental Setting	6-1
Regional Settings	6-1
Physical Setting	6-3
Regulatory Setting	6-4
County Land Use Regulations and Ordinances	6-4
Site-Specific Waste Discharge Requirements	6-4
	6-5
Impacts and Mitigation Measures	6-5
Approach and Methods	
Thresholds of Significance	6-6
Impacts of Agricultural Use	6-6
Impacts of Other Activities	6-9
Chapter 7. Biological Resources	7-1
Environmental Setting	7-1
Agricultural Activities	7-2
Silvicultural Activities	7-3
Horticultural Activities	7-5
Land Reclamation Activities	7-5
Regulatory Setting	7-6
Federal Endangered Species Act	7-6
Federal Migratory Bird Treaty Act	7-7
Bald and Golden Eagle Protection Act	7-7
California Endangered Species Act	7-7
Clean Water Act, Section 404	7-8
Impacts and Mitigation Measures	7-9
Approach and Methods	7-9
Thresholds of Significance	7-9
Impacts of Agricultural and Horticultural Use	7-11
Impacts of Other Activities	7-14
Chapter 8. Fish	8-1
Environmental Setting	8-1
Regions 1-4, 8, and 9: Pacific Coast	8-1
Region 5: Western Sierra Nevada and Central	0 1
and San Joaquin Valleys	8-2
Regions 6 and 7: Eastern Sierra Nevada, Great Basin,	0.2
and Colorado River	8-2
Impacts and Mitigation Measures	8-3
Approach and Methods	8-3
Thresholds of Significance	8-4
Impacts of Agricultural Use	8-4
Impacts of Agricultural Ose Impacts of Other Activities	8-5

Chapter 9. Traffic		9-1
_	vironmental Setting	9-1
	State Highway System	9-1
	Local Roadway System	9-2
Reg	gulatory Setting	9-2
Imp	pacts and Mitigation Measures	9-3
	Approach and Methods	9-3
	Thresholds of Significance	9-3
	Impacts of Agricultural Use	9-4
	Impacts of Other Activities	9-5
Chapter 10). Air Quality	10-1
Env	vironmental Setting	10-1
	Pollutants of Concern	10-1
	California Climate and Meteorology	10-3
Reg	gulatory Setting	10-3
	Federal Regulatory Environment	10-3
	California Regulatory Environment	10-4
_	Local Air Quality Regulatory Environment	10-5
Imp	pacts and Mitigation Measures	10-5
	Methods	10-5
	Thresholds of Significance	10-6
Imp	pacts of Agricultural Use	10-7
	Impacts of Other Activities	10-9
Chapter 11	. Noise	11-1
Env	vironmental Setting	11-1
	Noise-Sensitive Land Uses	11-1
	Existing Noise Conditions	11-1
•	gulatory Setting	11-2
Imp	pacts and Mitigation Measures	11-3
	Approach and Methods	11-3
	Thresholds of Significance	11-5
	Impacts of Agricultural Use	11-5
	Impacts of Other Activities	11-6
_	2. Cultural Resources	12-1
Set	ting	12-1
	Prehistoric Setting	12-1
	Ethnographic Setting	12-1
	Historic Setting	12-2
_	Regulatory Setting	12-3
Imp	pacts and Mitigation Measures	12-3
	Approach and Methods	12-3
	Thresholds of Significance	12-4
	Impacts of Agricultural Use	12-4
	Impacts of Other Activities	12-6

Chapter 13. Cumulative Impacts	13-1
Overview of Cumulative Impacts Analysis	13-1
Approach	13-1
Impacts	13-2
Groundwater Quality	13-2
Biological Resources	13-5
Air Quality	13-5
Transportation	13-6
Chapter 14. Alternatives Analysis	14-1
Alternatives to the Issuance of the General Order	14-1
No-Project Alternative	14-1
Modified GO Provisions and Specifications Alternative	14-2
Land Application Ban Alternative	14-3
Alternatives Considered but Rejected	14-4
Impact Comparison	14-7
No-Project Alternative	14-7
Modified GO Provisions and Specifications Alternative	14-10
Land Application Ban Alternative	14-13
Chapter 15. Mitigation Monitoring Program	15-1
Chapter 16. Citations	16-1
Chapter 17. Report Preparation	17-1
Appendix A. Draft Text of the General Order	
Appendix B. Notice of Preparation and Distribution List	
Appendix C. Existing Regulatory Programs for Biosolids Land Application	
Appendix D. Soils, Hydrology, and Water Quality Technical Appendix	
Appendix E. Public Health Technical Appendix	
Appendix F. Information on Special-Status Species	
Appendix G. Background Information on Acoustics	

List of Figures and Tables

Figure	Follov	ws Page
1-1	Regional Water Quality Control Board Boundaries	1-2
2-1	Typical Biosolids Management Practices	2-2
2-2	Distribution of Biosolids Generated in California (1988, 1991, and 1998)	2-2
2-3	Typical Biosolids Land Application Site	2-4
6-1	California Physiographic Regions	6-2
10-1	California Air Basins	10-2
Table		
ES-1	Summary of Impacts and Mitigation Measures for the California State Water Resources Control Board General Waste Discharge Requirement for Biosolids Land Application	ES-18
2-1	Quantities of Land-Applied Biosolids in California by County in 1998	2-4
2-2	Quantities of Land-Applied Biosolids in California by RWQCB in 1998	2-4
2-3	Regulatory Pollutant Concentrations and Loading Rates under Part 503 Regulations	2-6
2-4	Pollutant Concentration Limits for Biosolids Being Land-Applied	2-14
2-5	Cumulative Loading Limits for Biosolid Land Application Sites	2-14
3-1	Watershed Characteristics of California	3-6
3-2	Major Groundwater Basins of California	3-6
5-1	Pathogenic Bacteria of Concern	5-4
5-2	Pathogenic Viruses of Concern	5-4
5-3	Pathogenic Protozoans of Concern	5-4
5-4	Pathogenic Helminths of Concern	5-4

5-5	Summary of Biosolids Land Application in California 1998 (Ranked by Order of Land Applied Biosolids)	5-6
5-6	Summary of Reported Infectious Diseases in California 1993-1998 (Years in which Data Were Available for All Diseases)	5-6
5-7	Summary of Reported Infectious Disease Cases (Bacterial and Viral) by County 1991-1998	5-6
5-8	Summary of Reported Infectious Disease Cases (Parasitic, Protozoan, and Worm) by County 1991-1998	5-6
5-9	Chronic Human Health Effects Associated with Regulated Contaminants found in Biosolids	5-16
6-1	Representative County Ordinance Conditions Pertaining to Land Use or Aesthetic Issues and Land Application of Biosolids	6-4
7-1	Characteristics of Habitat Types Authorized for Treatment under the General Order	7-4
10-1	Ambient Air Quality Standards Applicable in California	10-2
10-2	Air Quality Requirement Attainment Status by Pollutant and Air Basin	10-2
10-3	Vehicle Emissions from Biosolids Operations	on 10-7
11-1	Maximum Allowable Ambient Noise Exposure for Various Land Uses	on 11-2
11-2	Equipment Noise Emissions Levels	on 11-3
11-3	Estimated Project-Related Noise in the Project Area	on 11-4
15-1	Mitigation Monitoring Program	15-1

Acronyms and Abbreviations

ARB California Air Resources Board ASA American Society of Agronomy

Bay-Delta San Francisco Bay/ Sacramento-San Joaquin River Delta

BMPs best management practices

B.P. before present

CAA Clean Air Act

CAAQS California Ambient Air Quality Standards
Caltrans California Department of Transportation
CASA California Association of Sanitary Agencies

CCA Certified Crop Adviser
CCAA California Clean Air Act
CCR California Code of Regulations

CDFA California Department of Food and Agriculture

CEC cation exchange capacity

CEQA California Environmental Quality Act

CFR Code of Federal Regulations

CFU colony forming units

CIWMB California Integrated Waste Management Board

CNEL community noise equivalent level CNPS California Native Plant Society

CO carbon monoxide

Corps U.S. Army Corps of Engineers

dBA decibels above reference noise, A-weighted

DEHP di-ethylhexyl phthalate

DFA California Department of Food and Agriculture
DFG California Department of Fish and Game
DHS California Department of Health Services

DTSC California Department of Toxic Substances Control
DWSWAP Drinking Water Source Water Assessment and Protection

EIR environmental impact report

EPA U.S. Environmental Protection Agency

EQ Exceptional Quality
ESA Endangered Species Act

FCAA federal Clean Air Act

FREP Fertilizer Research and Education Program

GO General Order

HWCL California Hazardous Waste Control Law

LEA local enforcement agency

MAF million acre-feet

MCL maximum contaminant level mg/kg milligrams per kilogram mg/l milligrams per liter

MLRA Major Land Resource Area MPN/gm most probable number per gram

NAAQS National Ambient Air Quality Standard

NDDB Natural Diversity Data Base

NEPA National Environmental Policy Act NMFS National Marine Fisheries Service

NO2 nitrogen dioxide

NO3 nitrate

NOA notice of applicability
NOI notice of intent
NOx oxides of nitrogen
NOP notice of preparation

NPDES National Pollutant Discharge Elimination System NRCS U.S. Natural Resources Conservation Service

NWP Nationwide Permits

O3 ozone

ORNL Oak Ridge National Laboratory

PAHs polynuclear aromatic hydrocarbons PCAs possible contaminating activities

PCBs polychlorinated biphenyls

P.L. Public Law

PM2.5 inhalable particulate matter less than 2.5 microns in diameter PM10 inhalable particulate matter less than 10 microns in diameter

POTW publicly owned treatment works

ppm parts per million

ROG reactive organic gases

RWQCB regional water quality control board

SIP state implementation plan

SO2 sulfur dioxide

SOCs synthetic organic compounds

STLC soluble threshold limit concentration

SWFP solid waste facilities permit

SWRCB California State Water Resources Control Board

TAG technical advisory group
TLC threshold limit concentration

TPD tons per day

UC University of California

USC U.S. Code

USDA U.S. Department of Agriculture USFWS U.S. Fish and Wildlife Service

VMT vehicle miles traveled

WDR waste discharge requirements WHPA Wellhead Protection Area WWTP wastewater treatment plant

FG/l micrograms per liter